

REMARKS

Claims 1-3 are amended and claims 1-6 are pending in the present application. Applicants request reconsideration of the present application in light of the foregoing amendment and the following remarks.

The Examiner rejects claim 1 as being anticipated under 35 U.S.C. § 102(b) by U.S. Patent No. 5,591,184, to McDonnell et al. Claim 1 recites in part, “a collar rigidly fixed to an outer surface of the mixing tube...the collar being sized to slide upward through a bore of a cutting head and having a terminal end surface of the collar substantially normal to the longitudinal axis to bottom out against a surface of a member in the bore of the cutting head substantially normal to the longitudinal axis, to prevent the mixing tube from being inserted any further into the bore of the cutting head.”

In contrast, the housing 34 of McDonnell et al. is not a collar; rather item 34 of McDonnell et al. is a housing that is positioned within the fluid jet assembly housing 44 via threads 35. Column 4, lines 29-31. The housing 34 of McDonnell et al. is not configured to bottom out against the spring 40. In fact, the housing 34 is positioned within the fluid jet assembly housing 44 via screw threads 35 engaging internal threads on the housing 44. Column 4, lines 29-31. Therefore, it is threads 35 that prevent the tube from extending further into the fluid jet assembly housing 44; not the housing 34 bottoming out against a member in the assembly. Although, McDonnell et al. state that the spring 40 is seated over the tip of jet tube housing 34 (column 4, lines 36-37), this contact is not a result of the housing 34 bottoming out against the spring 40; the housing 34 and spring 40 come in contact because the housing 34 is threadedly fixed and the spring 40 bottoms out (or seats) against the fixed housing 34.

To clarify the geometry of a collar of the present application, claim 1 is amended to recite that the collar has opposing longitudinal terminal ends spaced from opposing longitudinal terminal ends of the mixing tube, as illustrated in at least Figure 6 of the present application. In contrast, in McDonnell et al., the housing 34 has an upper terminal end that is not spaced from the upper terminal end of the tube; the respective upper terminal ends coincide where the Examiner has called out numeral 703 in Appendix A of the Office Action dated November 13, 2006.

The Examiner rejects claim 2 as being obvious under 35 U.S.C. § 103(a) over McDonnell et al. in view of U.S. Patent No. 4,555,872, to Yie. Claim 2 recites that a distance from a top surface of the mixing tube body to a bottom surface of the collar is 0.02-2.0 inches. When this dimension falls in the range of 0.02-2.0 inches, the tool tip accuracy of the system is improved. (U.S. Publication No. 2004/0107810 A1, paragraph [0037]).

Moreover, claim 3 recites that a wall thickness of the collar is 0.01-0.2 inches. In contrast, the cited references do not disclose these dimension ranges. McDonnell et al. and Yie do not motivate or suggest improving tool tip accuracy by limiting these dimensions. The Examiner states that “McDonnell et al. disclose the invention including structure that appears to incorporate the distance from a top surface of the mixing tube to a bottom surface of the collar is 0.02-2.0 inches and the wall thickness of the collar is 0.01-0.2 inches.” (Emphasis added). The Examiner reasons that Figure 12 of McDonnell gives a general impression on how big the apparatus is relative to a human hand. However, McDonnell et al. is silent with respect to the dimensions of the housing 34, which the Examiner analogizes to the collar of the present application.

“When the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value.” (MPEP 2125; See *Hockerson-Halberstadt, Inc. v. Avia Group Int'l*, 222 F.3d 951, 956, 55 USPQ2d 1487, 1491 (Fed. Cir. 2000)). The human hand in McDonnell et al. may simply represent the holding posture and activation method of the apparatus in McDonnell et al. In addition, there is no standard dimension or scale for a human hand, and different individuals have distinct hand sizes. Accordingly, it is completely speculative to estimate the dimension from the top of the housing 34 of McDonnell et al. to the bottom of the housing 34 to be 0.02-2.0 inches and a wall thickness of the housing 34 to be 0.01-0.2 inches, simply by examining Figure 12 of McDonnell et al. Also, it is not clear from that patent or the Examiner’s description and the figure appended thereto, as to what defines a collar or a bottom of the collar in McDonnell et al. Based on the foregoing, claim 2 and claim 3 are allowable over McDonnell et al.

The Examiner further argues that Yie discloses that the internal bore of the apparatus is 0.25 inches. On this basis, the Examiner concludes that the dimension range in

claim 2 would have been obvious. However, the dimension of 0.25 inches in Example II of Yie is the dimension of the bore 21 of the nozzle body 20 of Yie, which houses the fluid before the fluid is pressurized, upstream of the orifice support cone 50. (See column 8, lines 48-60; Figure 1; column 16, lines 56-57). This dimension is irrelevant to the distance from a top surface of the mixing tube body of the present application to a bottom surface of the collar, which is graphically represented by reference numeral 57 in Figure 6 of the present application. When this dimension falls in the range of 0.02-2.0 inches, the tool tip accuracy of the system is improved. (U.S. Publication No. 2004/0107810 A1, paragraph [0037]). As discussed above, McDonnell et al. and Yie do not motivate or suggest improving tool tip accuracy by limiting these dimensions.

In contrast to the nozzle body of Yie, the mixing tube of the present application is configured to position downstream of the orifice and is formed to withstand the passage of a high-pressure fluid jet therethrough. As illustrated in Figure 1 of Yie, the downstream structure in Yie is completely different as compared to the mixing tube of the present application because the downstream structure in Yie does not incorporate a mixing tube; instead, Yie incorporates the flow-shaping cone 50, which lacks a collar. (Figure 1). Therefore, Yie cannot possibly teach, suggest, or motivate the dimension range in claim 2. Accordingly, claim 2 is allowable over Yie and McDonnell et al.

The Examiner also uses the 0.25 inches dimension of the bore 21 of the nozzle body 20 of Yie to reject the dimension range in claim 3, reasoning that this range would be obvious for the wall thickness of the collar to fit inside a known bore size of a fluid jet system. However, there are multiple components in a fluid jet system and the dimension disclosed in Yie is not a universal dimension applicable to every bore of that system. The collar of the present application is not configured to fit inside the nozzle body upstream of the orifice; rather the collar of the present application is sized to slide up the cutting head bore, which is downstream of the orifice. Accordingly, Yie and McDonnell et al. fail to teach, suggest or motivate the dimension range claimed in claim 3. Therefore, claim 3 is also allowable over Yie and McDonnell et al.

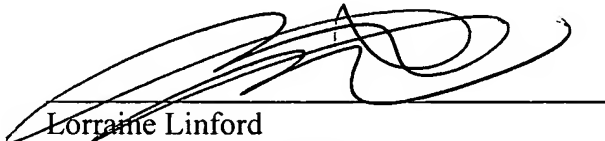
Claims 4-6 are allowable for being dependent from allowable claim 1. Claims 4-6 may also be allowable on their own merits. Applicants reserve the right to make any arguments not made here in support of the dependent claims at a later time, as Applicants deem necessary.

Applicants submit that all of the claims remaining in the application are now allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

Respectfully submitted,

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